

Study Programme: Veterinary medicine		
Course Unit Title: Diseases of fish and aquatic organisms		
Course Unit Code: 3IVM9O43		
Name of Lecturer(s): Assistant Professor Nikolina Novakov, Teaching assistant Bojana Vidović		
Type and Level of Studies: Integrated Academic Degree		
Course Status (compulsory/elective): Compulsory		
Semester (winter/summer): Winter		
Language of instruction: English		
Mode of course unit delivery (face-to-face/distance learning): Face-to-face		
Number of ECTS Allocated: 3		
Prerequisites: None		
Course Aims: The subject enables student to acquire knowledge from the etiology, epidemiology, pathogenesis, pathology, prevention and treatment of diseases of fish and aquatic organisms. The student should acquire skills of clinical and laboratory diagnostics of fish diseases and ability to solve practical problems in the field of the subject.		
Learning Outcomes: After completion of the course from this subject a student should be able to: 1. define and describe the concepts from etiology, epidemiology, clinics and treatment of diseases of fish and aquatic organisms; 2. recognize the economic worth of fish species; 3. determine the clinical and pathoanatomical findings in diseased fish; 4. implement the laboratory methods for diagnosis of fish diseases; 5. make a distinction between diseases caused by etiologic agents and technopathies; 6. determine and implement adequate prophylaxis and therapy; 7. participate individually and in a team in solving of practical problems in the field of the subject.		
Syllabus:		
<i>Theory</i>		
Economically valuable species of fish and aquatic organisms. Carp ponds. Trout ponds. Diseases of fish and aquatic organisms and their characteristics. Diseases of viral etiology. Diseases of bacterial origin. Fungal diseases. Parasitic diseases. Diseases caused by leeches. Diseases caused by defects in the diet. Diseases and poisoning due to unfavorable environmental conditions. Problems related to wintering of fish.		
<i>Practice</i>		
Economically valuable species of fish and aquatic organisms. Soil treatment of carp ponds. Physicochemical analysis of the water. The morphological and biological characteristics of the fish. Topographic position of fish organs. Organ systems. Section of diseased fish. Pathological and anatomical changes. Taking, fixing and sending of samples for examination. Determination of freshness of fish corpse. Diagnosis of diseases of viral etiology. Diagnosis of diseases of bacterial etiology. Diagnosis of diseases of fungal etiology. Diagnosis of parasitic diseases. Diagnosis of organic diseases of fish. Fatty degeneration of the liver. Obesity.		
Required Reading:		
<ol style="list-style-type: none"> 1. Ćirković, M. Fisheries. Faculty of Agriculture, Novi Sad, 2002. 2. Fijan, N. Health protection of fishes. Faculty of Agriculture, Osijek, 2006. 3. Jeremić, S. Fish diseases (Atlas). Scientific Veterinary Institute of Serbia, Belgrade, 2006. 4. Edward, J. Noga. Fish diseases. Blackwell, 1996. 		
Weekly Contact Hours:	Lectures: 2	Practical work: 2
Teaching Methods:		

Within the method of teaching, lectures combined with interactive teaching in all teaching subject chapters are used. Practical teachings include chapters: Economically valuable species of fish and aquatic organisms, Field methods of examinations and Sampling, fixation and sending materials for inspection. Other exercises which are performed in the laboratory include chapter: Diagnosis of bacterial viral and parasitic diseases. One seminar on topics from any of theory chapters is necessary. Testing of knowledge is implemented through two obligatory tests, practical and oral exam. Colloquiums include the next chapters: Diagnosis of bacterial viral and parasitic diseases and diagnosis of organic diseases of fish. Written and oral exam include all teaching chapters of the subject.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	20
Practical work	10	oral exam	30
Preliminary exam(s)	20	
Seminar(s)	15		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.